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THE WEATHER OF THE MONTH.

By Mr. P. C. DAY, Assistant Chief, Division of Meteorological Records.

PRESSURE.

The distribution of mean atmospheric pressure for February, 1907, over the United States and Canada is graphically shown on Chart VI, and the average values and departures from the normal are shown for each station in Tables I and V.

February, 1907, was ushered in with pressure distribution similar to that which had prevailed during most of the preceding month—high atmospheric pressure over the Canadian Northwest Provinces, and comparatively low pressure over the central Rocky Mountain and Plateau districts, and extending eastward toward the Great Lakes.

The area of high pressure moved rapidly southeastward into the upper Missouri and Mississippi valleys during the first few days of the month, increasing markedly in intensity, and during its passage eastward brought the severest cold of the winter to all districts along the northern border from the Rocky Mountains to New England.

The passing eastward of the above-mentioned high area marked the breaking up of the pressure distribution that prevailed so persistently during January over the Canadian Northwest Provinces and the upper Missouri Valley. Low pressure areas moved into those regions from the north Pacific coast, and high pressure developed over the central Pacific, Plateau, and Rocky Mountain districts, and, extending eastward toward the Mississippi Valley, gave moderate weather conditions over nearly all districts, except New England, from the 6th to the 25th.

From the 25th to the end of the month, a strong area of high pressure, that probably developed far to the north of the field of observation, moved southeastward over Manitoba and surrounding districts, and the month closed with severe weather prevailing in nearly all northern districts from Montana to New England.

The average pressure was highest over the northern Rocky Mountain, Plateau, and upper Missouri districts, and lowest over the Canadian Maritime Provinces. Pressure was above the normal for the month in all districts of the United States and Canada, except portions of New Brunswick and Nova Scotia, where a slight deficiency prevailed. Average pressure .10 inch or more above the normal prevailed in the upper Missouri Valley and north of the Great Lakes toward Hudson Bay.

Under the influence of high pressure north of the St. Lawrence Valley, cold northerly winds were discharged over New England and the lower Lake regions, while along the northern border from the Lakes to the Pacific, with high pressure to the south, warm southerly winds were frequent.

TEMPERATURE.

Unusually warm weather prevailed during most of the month over the entire portion of the United States, from the Mississippi Valley westward to the Pacific, and northward over the Canadian Northwest Provinces. From Nebraska west to the Pacific and south to the Mexican boundary the month was nearly continuously warmer than the average, and no serious cold wave was experienced in that region during the entire month. Over portions of Colorado, Utah, Nevada, and surrounding States the mean temperature exceeded the average by more than 10° daily, and at numerous points was the highest February mean observed in the history of the respective stations.

Over New England, the Middle Atlantic States, and the eastern part of the lower Lake region the cold weather inaugurated during the latter part of January continued, with slight interruptions, during the whole of February, and the month, especially over New England, was one of the coldest in the meteorological history of that section.

During the eastward progress of the high-pressure area over the Northern States, from the 1st to the 5th of the month, severe cold was experienced in the districts from the Dakotas to the Great Lakes, with minimum temperatures 50° or more below zero in parts of northern Minnesota and Wisconsin, and

freezing weather as far south as central Texas. A southern extension of the above-mentioned high area brought a moderate cold wave over the east Gulf and Atlantic coast States from the 7th to the 9th, with temperatures near the freezing point in northern Florida, and of zero or lower in the Appalachian Mountain districts from Virginia northward.

Over southwestern Arizona and the greater part of the lower elevations of California the temperature did not go below the freezing point and killing frosts were reported from but few places.

Temperatures of 30° or more below zero were recorded in northern Maine, central and northern Wisconsin, Minnesota, the Dakotas, and in Montana east of the main range of the Rocky Mountains.

Altho warm weather was the rule in all western districts the maximum temperatures were not unusually high, and readings above 80° were confined to central and southern Texas, southwestern Arizona, southern California, and the Florida Peninsula.

PRECIPITATION.

The month as a whole was one of very light precipitation. Small districts in southwestern Alabama and eastern Mississippi, central North Carolina, the middle Missouri Valley, the central Rocky Mountain and Plateau districts, and near the coasts of northern California and southern Oregon received amounts slightly in excess of the average; elsewhere the monthly precipitation was uniformly less than the average.

From the lower Lakes southwestward over the Ohio and middle Mississippi valleys into northeastern Texas the monthly amounts were largely deficient, and in the central parts of Ohio, Indiana, and Illinois it was the driest February on record.

Over the South Atlantic States and the Florida Peninsula precipitation was again deficient, especially over Florida, where the dry period inaugurated in the autumn of 1906 continued during the entire month. The total deficiency in that State from September, 1906, to February, 1907, inclusive, amounts to more than 10 inches for the entire State.

Along the eastern slopes of the Rocky Mountains and over the Great Plains the precipitation was uniformly light. In the western parts of Kansas, Oklahoma, and Texas, and the eastern parts of New Mexico and Colorado the month was practically without precipitation.

SNOWFALL.

The snowfall was generally light in all districts, except in New England, the Middle Atlantic States, and lower Lake region, where amounts equal to or in excess of the average were generally reported. There was also a slight excess on the western slopes of the mountains in Montana, and on the eastern slopes of the Cascades in Oregon, but elsewhere in the mountain districts of the west the snowfall was largely deficient.

At the end of the month considerable snow remained on the ground from Pennsylvania northeastward over New England. In the northern sections of New York and Maine the accumulated snow had attained a depth of from 2 to more than 4 feet.

From the Lake region westward to Montana the ground was generally covered, altho the warm weather during the middle of the month caused much of the snow to disappear in the southern parts of the district, and materially reduced the depth in the northern sections, and in places cleared the ranges of snow for the first time during the winter.

Over the western mountain districts much snow disappeared from the lower levels, but the unfrozen ground generally absorbed the runoff, while at the higher elevations the warm weather solidified the snow without materially lessening the water contents, thereby tending to insure both a plentiful and long-continued supply of water in the streams.

HUMIDITY AND CLOUDINESS.

Cloudiness and humidity were both slightly deficient in nearly all eastern districts, while from the Mississippi Valley westward these elements were generally in excess of the normal.

The fair and warm weather during the period from the 5th to the 25th over the districts from the Appalachian Mountains westward afforded more than the usual opportunities for the successful prosecution of outdoor occupations.

Average temperatures and departures from the normal.

Districts	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
		°	°	°	°
New England	12	18.8	— 7.0	— 8.2	— 4.1
Middle Atlantic	16	28.6	— 6.2	— 2.8	— 1.4
South Atlantic	10	46.1	— 2.8	+ 4.2	+ 2.1
Florida Peninsula*	8	61.8	— 0.5	+ 4.9	+ 2.4
East Gulf	11	52.0	+ 0.4	+ 9.9	+ 5.0
West Gulf	10	53.8	+ 2.8	+13.2	+ 6.6
Ohio Valley and Tennessee	13	34.3	— 3.2	+ 4.2	+ 2.1
Lower Lake	10	21.2	— 5.3	— 3.7	— 1.8
Upper Lake	12	18.0	— 1.4	— 1.4	— 0.7
North Dakota*	9	12.0	+ 4.9	— 6.5	— 3.2
Upper Mississippi Valley	15	26.3	+ 1.5	+ 3.9	+ 2.0
Missouri Valley	12	28.1	+ 3.6	+ 4.1	+ 2.0
Northern Slope	9	27.5	+ 6.4	+ 0.5	+ 0.2
Middle Slope	6	38.3	+ 5.9	+10.1	+ 5.0
Southern Slope*	7	47.0	+ 6.5	+14.6	+ 7.3
Southern Plateau*	12	48.8	+ 7.0	+ 9.8	+ 4.9
Middle Plateau*	10	39.9	+11.2	+13.6	+ 6.8
Northern Plateau*	12	35.4	+ 5.8	+ 1.1	+ 0.6
North Pacific	7	43.6	+ 3.1	— 1.0	— 0.5
Middle Pacific	8	53.6	+ 4.4	+ 3.1	+ 1.6
South Pacific	4	58.4	+ 5.0	+ 4.4	+ 2.2

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Director R. F. Stupart says:

West of Lake Superior the mean temperature of the month was above the average, while east of it the mean was below the average. The largest positive departures, amounting to 7°, occurred in Saskatchewan, and the largest negative departures, also about 7°, occurred in western Quebec and southern New Brunswick. In the Western Provinces the extremes of temperature were pronounced, five days of extreme cold being followed by a fortnight of unseasonably mild weather which was in turn followed by moderately cold weather. From Ontario eastward the temperature was almost continuously below average.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		Inches.		*Inches.*	*Inches.*
New England	12	2.19	65	—1.2	—2.1
Middle Atlantic	16	2.26	67	—1.1	—2.5
South Atlantic	10	2.54	68	—1.2	—4.6
Florida Peninsula*	8	0.95	30	—2.2	—4.7
East Gulf	11	4.86	102	+0.1	—2.5
West Gulf	10	1.90	58	—1.4	—2.6
Ohio Valley and Tennessee	13	1.87	44	—2.4	—0.5
Lower Lake	10	0.77	29	—1.9	—0.4
Upper Lake	12	0.63	33	—1.3	—0.8
North Dakota*	9	0.29	49	—0.3	+0.4
Upper Mississippi Valley	15	0.77	41	—1.1	+0.6
Missouri Valley	12	0.98	83	—0.2	+1.0
Northern Slope	9	0.50	83	—0.1	+0.1
Middle Slope	6	0.53	73	—0.2	+0.1
Southern Slope*	7	0.31	34	—0.6	—0.2
Southern Plateau*	12	0.68	63	—0.4	+0.6
Middle Plateau*	10	1.20	100	0.0	+0.3
Northern Plateau*	12	2.01	125	+0.4	+0.5
North Pacific	7	5.06	89	—0.6	—2.4
Middle Pacific	8	4.29	102	+0.1	+0.9
South Pacific	4	1.42	54	—1.2	+1.6

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Director Stupart says:

In British Columbia the precipitation was above average in most localities, and was chiefly in the form of rain, which at the lower levels soon cleared away the snow which lay on the ground early in the month. In the Western Provinces there was no rain and the snowfall was quite light. In Ontario there were many light snowfalls, and in the southwestern part of the province a few showers, while in Quebec there were many snowfalls, some of which were heavy. In the Maritime Provinces

the total precipitation was very generally in excess of the average, with some rain; but it was for the most part snow, which in a few instances was heavy.

At the close of the month southwestern Alberta and the lower levels of southern British Columbia were bare of snow, while all other districts were covered.

In Quebec and New Brunswick the depth was considerable, ranging from 30 to 60 inches, but in Ontario and the Western Provinces a covering of less than 24 inches in northern districts lessened to a depth of a few inches in the more southern portions.

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Block Island, R. I.	3	52	w.	Mount Weather, Va.	3	50	nw.
Do	5	64	ne.	Do	10	52	nw.
Do	11	58	nw.	Do	11	52	nw.
Do	12	50	nw.	Do	14	68	nw.
Do	21	50	nw.	Do	15	56	nw.
Do	23	54	nw.	Nantucket, Mass.	5	70	ne.
Buffalo, N. Y	2	72	sw.	North Head, Wash.	4	52	s.
Do	3	63	w.	Do	5	59	s.
Do	10	66	sw.	Do	7	55	se.
Do	14	53	sw.	Do	23	62	se.
Burlington, Vt.	3	54	w.	Do	24	65	se.
Do	13	54	se.	Do	25	57	s.
Do	14	55	se.	Oswego, N. Y	2	52	w.
Canton, N. Y.	2	69	sw.	Point Reyes Light, Cal.	25	56	nw.
Do	3	72	sw.	Do	26	52	nw.
Cheyenne, Wyo.	1	50	w.	Pueblo, Colo	1	50	w.
Chicago, Ill.	2	50	nw.	Sault Ste. Marie, Mich.	24	50	nw.
Cleveland, Ohio	2	52	w.	Seattle, Wash	5	53	s.
Do	10	60	w.	Sioux City, Iowa	1	52	nw.
Duluth, Minn	13	54	nw.	Syracuse, N. Y.	3	50	sw.
Do	14	50	nw.	Do	24	50	s.
Eastport, Me.	5	50	ne.	Tatoosh Island, Wash.	3	60	e.
Do	17	50	ne.	Do	4	52	e.
Do	18	50	ne.	Do	5	61	sw.
Grand Haven, Mich.	10	50	w.	Do	7	63	s.
Mount Tamalpais, Cal.	2	52	w.	Toledo, Ohio	2	50	w.
Do	24	55	w.				

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	5.2	— 0.3	Missouri Valley	5.2	— 0.2
Middle Atlantic	5.0	— 0.6	Northern Slope	5.3	+ 0.1
South Atlantic	5.2	— 0.1	Middle Slope	4.3	— 0.1
Florida Peninsula	3.2	— 1.3	Southern Slope	3.5	— 1.1
East Gulf	5.0	— 0.7	Southern Plateau	3.3	+ 0.3
West Gulf	4.8	— 1.0	Middle Plateau	4.9	+ 0.6
Ohio Valley and Tennessee	6.2	0.0	Northern Plateau	6.7	+ 0.5
Lower Lake	6.4	— 0.4	North Pacific	7.1	+ 0.1
Upper Lake	6.0	— 0.3	Middle Pacific	7.3	+ 2.5
North Dakota	4.4	— 0.4	South Pacific	5.2	+ 1.1
Upper Mississippi Valley	5.4	+ 0.1			

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
	%			%	
New England	72	— 3	Missouri Valley	75	0
Middle Atlantic	72	— 2	Northern Slope	74	+ 3
South Atlantic	77	+ 1	Middle Slope	62	— 5
Florida Peninsula	78	— 2	Southern Slope	56	— 8
East Gulf	73	— 3	Southern Plateau	54	+10
West Gulf	70	— 4	Middle Plateau	65	+ 2
Ohio Valley and Tennessee	72	— 2	Northern Plateau	77	+ 3
Lower Lake	79	— 1	North Pacific	85	+ 2
Upper Lake	79	— 3	Middle Pacific	83	+ 8
North Dakota	80	+ 1	South Pacific	74	+ 5
Upper Mississippi Valley	78	+ 1			